WSTF employees, high school students spend weekend on Mars

Sixty-five students and four educators spent a weekend learning more about the red planet when they attended the Third Annual Mars Settlement Design Competition. The event was sponsored by Johnson Space Center and White Sands Test Facility (WSTF). In the Mars Settlement Design Competition, students write and present a proposal for a settlement on Mars that will accommodate more than 14,000 people. Within this framework, the students learn how to work in teams, meet company deadlines and consider cost and budget.

The students worked throughout the morning and midnight hours preparing a proposal that would answer the criteria set forth by Anita Gale and Dick Edwards – Boeing systems engineers and cofounders of the Mars Settlement Design Competitions. The teams then presented their settlement design proposals on Sunday morning to a panel of industry judges. Each proposal was limited to 50 pages and a 30-minute presentation.

Opening ceremonies keynote speaker NASA astronaut Bonnie Dunbar, Ph. D., and spotlight speaker Brian Derkowski, JSC Advanced Development Office, enlightened parents, students and educators about the benefits of NASA exploration and programs on Mars.

Gale and Edwards also spoke about the benefits of the competition as related to the student's future in creating a successful, collaborative workplace.

At the event, Science Advisors (SciAds) were in a commons area, while the judging of the proposals occurred. Vacuum, micro gravity and rocketry were the SciAd topics presented to students and educators.

One of the interesting questions asked to participants at the Vacuum table was: Can boiling water reach freezing temperatures? The demonstration shows that the answer is yes. As the atmosphere (within the bell jar dome) is reduced to below the vapor pressure, the water boils and releases heat. As heat is released, the water cools. As the pressure approaches vacuum, this cooling pattern continues until the water freezes.

First-time CEO Erin Edgerly (NASA/WSTF Co-op) spearheaded the winning team. "The kids were really great. If I had known about this competition in high school, I would have wanted to participate," Edgerly said. "As it was, I enjoyed participating in the competition as a CEO."

Participant Kristin Bishop told the audience at the closing ceremonies that the event was "Awesome! This is my third competition, and I can't express how wonderful this experience is."

Gale echoes Bishop's comment. "I am often thrilled by the student's reaction to the competition. They feel that the competition has changed their lives."

Gale isn't alone in her thinking. New Mexico High School Educator Mark Bono agreed when he wrote to Pleddie Baker, Mars Settlement Design Coordinator. "Thank you for the opportunity you gave my kids this weekend. They are still on adrenaline highs and organizing a request for proposal for the international competition. I know this will be an annual event for my students. The fact that you do all of this work for these kids is not unappreciated. This is great advertisement for the NASA space program."

This year's competition was indeed a success. "We had a group of outstanding and hard-working students, as well as some very dedicated teacher chaperones," Baker said.

"The students' proposals were excellent, and it was hard for our eminently qualified judges to pick a winning team. Personally, I believe that when you participate in an experience like this, every student is a winner."

Baker went on to thank all the hard-working WSTF volunteers, NASA JSC, Honeywell and local businesses that made the event possible.

"At each Mars Settlement Design Competition, it has become evident to me that the youth of our nation are bright, eager and committed to science and engineering," said Hallock, the event co-coordinator.

"The participants apply skills from all corners of academia towards the goal of one day setting foot on Mars. Through this one event, I believe that I have spoken with the astronaut who will set foot on Mars. It is just a matter of time." ◆

Mars Settlement Design Competition participants design their team's settlement by choosing the location wisely.

Mars Settlement Design Competition Participants

Committee members
Pleddie Baker
Mike Hallock
Cheerie Patneaude
Lurlene Ford
Steve McDougle

Librarians
Vonda Litzenberg
Joan Von Wolff

Logistics and registration
Denise Barrett
Gail Bennett
Holger and Cecilia Fischer
Peggy Kiser
Steve McDougle
Linda Green
Lurlene and Lindy Ford
Asher and Rechelle Lieberman
Tracy Gonzales
Lindy and Lurlene Ford
Larry Schuyler
Cheerie Patneaude
Mike and Julie Hallock
Richard Von Wolff
Tom Quayle
Eliazar Obregon
Patsy Segura
Susan Staley

Technical experts
Jim Hansen
Richard Horst
James Nunez
Lou Barrera
Bob Kowalski
Brian Ross
John Anderson
Paul Spencer

CEOs
Dave Loyd
Case Van Dyke
Erin Edgerly
Lou Barrera
Deb Chowning
Science Advisors
Bill Curtis
Denzil Burnam
Aaron Paz
Mark McClure
Asher and Rechelle Lieberman
Chase Curtis

Judges
Bonnie Dunbar, Ph.D., NASA Astronaut
Brian Derkowski, JSC's Advanced Development Office
Anita Gale and Dick Edwards, cofounders
Joe Vigil, Los Alamos National Laboratories
Patricia Hynes, New Mexico Space Grant Consortium
Steve Sanchez, New Mexico State Department of Education
Young Ho Park, New Mexico State University, Department of Engineering
Robert Quintana, Technology Teacher, Vista Middle School
Barry Plante, Chief, NASA Engineering Office, WSTF